ITB Event 32110-11321 TFACA Building Repairs
2161 Unionville Deason Road
Bell Buckle, Tennessee

The Simulation Building at the TN Fire and Code Academy is a six (6) story building with poured in place concrete structures and CMU block infills. A previous inspection indicated that the building is in good condition and has no major structural deficiencies. The following specifications outline repairs needed to the building. Suppliers will have the opportunity to do a site visit after the scheduled Pre-Bid Meeting. Alternative site visit times may be coordinated as needed with Chelsie Lutton at 615-253-8296 or Chelsie.Lutton@tn.gov. Site visits will enable Respondents to provide a more accurate bid. Questions about the bidding process or solicitation should be directed to the solicitation coordinator, Kayla Cook at 615-741-9496 or Kayla.R.Cook@tn.gov. Please see Edison event details for more information. The specifications below should not be the only repairs completed if other areas of concern are identified in order to ensure the building is safe and complies with all applicable codes. Please see Code Requirements on page 2.

Exterior:

- The perimeter concrete beam directly above the door leading to the Class A burn room exhibits visible cracking throughout its length.
- A corner of the concrete slab at the second level balcony at the northwest corner of the building has a severe crack/spall from a ladder impact.
- The rail system at the spiral stair leading from the 1st floor Class B burn room to the 2nd floor bedroom is significantly damaged making it largely ineffective.
- The two steel beams supporting the roof trusses over the 4th floor balcony at the northeast corner of the building exhibit corrosion at their connections to the embed plates in the supporting concrete walls.
- The perimeter guardrails at the 2nd level balcony at the northwest corner of the building as well as at the 6th level roof are inserted into cores in the concrete slab. Due to water infiltration, the base of the rail posts are significantly corroded, compromising the ability of the posts to support the code prescribed loadings.
- The eye bolt connection to the rappelling anchorage post is too high. As a result, the strength of the steel anchorage is not adequate to support the load required for fall arrest systems as defined by OSHA.
- Gas lines on the exterior of the simulation building show significant rust. Bollards require wire-brushing and high-performance paint application.
- Metal access panels at stairs show significate rust along the edges.
- The hybrid steel/concrete stair pans were generally found to be in good physical

condition. However, in a few locations rust and corrosion forming on the underside of the stair pans was identified.

- Louver panel has severely damaged surfaces and are connected to designated burn rooms. This will continue to experience direct flames and heat through the duration of the life of the building.

Recommended Repairs:

- Install a CFRP wrap such as the Sika Wrap Hex 103C or equal around the concrete beam above the Class A burn room for the full length of the beam. Apply a fire protection mortar such as Sika Crete 213F or equal over the CFRP wrap for the full length of the beam.
- Remove the crack/spalled concrete at the corner of the second level balcony at the northwest corner of the building with and repair with high strength mortar such as Sika Quick VOH or equal. The cracks that remain below the spall shall be injected with an epoxy resin such as Sikadur 52 or equal.
- The spiral stair shall be demolished and replaced with a heavy duty galvanized steel staircase. Based on the abuse that this stair is likely exposed to, a stair that is more robust than the existing stair is ideal.
- The embed plates in the concrete walls supporting the roof beams over the 4th floor balcony shall be cleaned of corrosion to the extent possible and painted with a corrosion inhibitor such as Armatec 110 or equal.
- The existing perimeter guardrails at the 2nd floor balcony and 6th floor roof shall be removed and replaced in their entirety due to the corrosion at their base. The new posts shall be bolted to either the horizontal or vertical surface of the concrete with a plate and post installed anchors.
- The eyebolt shall be lowered at least 12 ½" in each of the 4 rappelling anchors.
- For the entire interior staircase: seal the concrete at metal seams to prevent further rust and water damage.
- Replace doors, jambs, windows and hardware that are damaged where repairs are not possible. Note that none of the doors are corten steel. Please see the following list:

First Floor –

- Double doors on East side, replace left door
- South side, replace exterior door entering at bottom of stairs for high-rack storage
- South side, replace double doors entering class A burn room with standard doors
- South side, replace from for double doors entering class A burn room
- North side, replace exterior forcible entry door entering living room
- Replace interior door from hallway entering bathroom
- West side, replace exterior door entering stairwell

Second Floor –

- West side, replace interior door from 2nd floor landing to mechanical room
- North side, replace door leading from room to balcony
- Note: Hinges and retention chains broken on both 2nd floor hatch doors

Third Floor -

- West side, replace window 56.5”w x 73”h

Fourth Floor –

- West side, replace window 56.5”w x 73”h
- North side, replace door frame leading from 4th floor to industrial ladder landing
- Replace door frame for double doors leading into mechanical room from 4th floor room
- South side, replace double doors leading from mechanical room to exterior roof near crane
- South side, replace double door frame leading from mechanical room to exterior roof near crane
- South side, replace door leading from stairwell to 4th floor roof near crane

Fifth Floor-

- Replace stairwell door at 5th floor landing
- East side, replace door and frame leading from 5th floor out to roof near fans
- North side, replace window 56w x 72h
- West side, replace window 56w x 72h

Code Requirements:

- Contractor must reference and follow all applicable requirements stated in the Regulatory Requirements of the State Building Commission. The Contractor is responsible for ensuring the project and repairs comply with all pertinent codes, standards, regulations, and laws. Please use the following link: https://www.tn.gov/content/dam/tn/generalservices/realestate/designersmanual/appendix2/generalrequirements/014115_July_2016.pdf

Photo References: